



# **Mars Convertible**

## **Convertible On-Line UPS**



### **Convertible Double Conversion On-Line UPS**

- Tower/Rack Convertible Design
- Unity Input Power Factor
- Double Conversion On-Line Technology
- Complete Protection Circuitry
- Easy Swappable Battery
- User Friendly Display
- Matching Battery Cabinet
- Smart Battery Management
- Customer Options Slot
- Optional Automatic & Manual Bypass



# Mars Convertible

## Mars Convertible Series On-Line UPS

**7** The Mars Convertible series, featured with industry-leading functionality, such as Unity Input Power Factor, Double Conversion On-Line Topology, Zero Transfer Time, Wide Input Voltage Range, Easy Swappable Battery, Smart Battery Management, is an ideal power protection solution for Servers, Networks, Storage, Telecommunications, Industrial Equipment as well as Medical Diagnostic equipment.



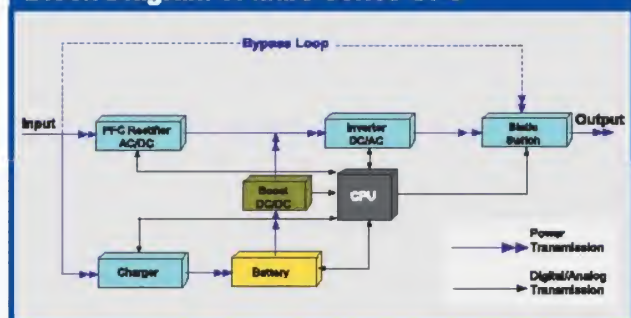
### Tower/Rack Convertible Design

Offers a flexible form factor enabling integration into a wide variety of environments and minimizing a great stock pressure from distributors/dealers.

### Unity Input Power Factor

Meets today's industry standard for energy saving and low reflected harmonic pollution to the Utility.

### Block Diagram of Mars Series UPS





### Single-Chip Microprocessor Control

Uses a field proven MPU to substantially reduce the component count. This provides great reliability, functionality and small size than other designs. Using the latest high frequency techniques and quality components reliability is further increased. High system efficiency is achieved in all operating modes saving electricity.

### Double Conversion On-Line Technology

Completely re-generates the Utility power to correct the power disturbances in the Mains. The unit provides clean A.C. power 24 hours a day 365 days a year.

### User Friendly Display

Clearly communicates all major system parameters and system status including load Level, battery remaining and fault status for easy service.



### Matching Battery Cabinet

Is available to easily extend the UPS runtime to several hours. The battery Cabinets are available with their own independent chargers to provide safe and fast recharging.



### Smart Battery Management System(SBM)

Monitors the battery charging and discharging status to extend the battery's life.

### Communication Capability

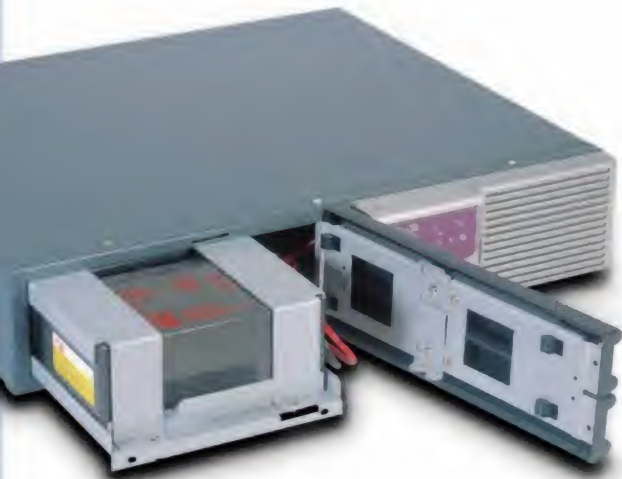
The Mars Convertible series are all shipped with shutdown software as standard. The software allows not only the control of the UPS and graceful shutdown when the Utility fails, but also allows the user to:

- remotely test the major operating functions of the UPS
- communicate via SNMP/web/network adapter
- access UPS functions via the web
- alert users via SMS messages against specific events



*The free software supplied supports Novell Netware, windows 95/98/2000/Me/XP/NT, Linux and FreeDSB. Major Unit platforms are available as a cost option.*





### Easy Swappable Battery

Has a facility for the user to easily change the batteries at the end of useful service life.

### Complete Protection Circuitry

The Mars Convertible series designed with nowadays technology is particularly suited to computer and telephony switch mode power supply.

Through careful design, maximum security is provided to the load. In particular the units feature high overload handling without transfer to bypass. Short circuit and over temperature are protected as standard.

The input PFC circuitry can handle very wide ranges of AC input voltages to avoid the frequent use of battery energy. Consequently, the system security and battery life can be maximized ensuring that the batteries are available when you need them most.....Power failures!

### Customer Options Slot

A true RS232 communication port is supplied as standard with each UPS. This can be used with the software provided or an external SNMP adapter. The Options Slot allows further flexibility in network configuration. Four cards are available: An internal SNMP card, an AS400 card, a true relay card or a USB card to provide isolated contacts for industrial and remote alarm panel application.

### Optional Automatic & Manual Bypass

Ensures continuous supply of power to the critical load in the event of electronic failure, overload, overheat or scheduled maintenance. A matching Maintenance Bypass Switch Box(MTBS) is able to be provided for 3KVA UPS.





# Backup Time Reference:

Load	MS1000/MS1000R	MS2000/MS2000R	MS3000/MS3000R
400VA/280W	28 Min.	63 Min.	96 Min.
800VA/560W	9 Min.	25 Min.	72 Min.
1000VA/700W	8 Min.	17 Min.	24 Min.
1500VA/1050W		10 Min.	18 Min.
2000VA/1400W		8 Min.	14 Min.
2500VA/1750W			10 Min.
3000VA/2100W			8 Min.

## Technical Specification:

MODEL	MS1000RT	MS2000RT	MS3000RT
<b>INPUT</b>			
Voltage (Vac)	80~140 or 160~280		
Frequency (Hz)	50/60+/-5% (Auto Sensing)		
Phase	Single		
Input Power Factor	>0.98 (Full Load)		
<b>OUTPUT</b>			
Voltage (Vac)	100/110/120 (127Vac also available) or 220/230/240		
Capacity (VA/W)	1000VA/700W	2000VA/1400W	3000VA/2100W
Rated Power Factor	0.7 Lagging		
Load Power Factor Range	0.5 Lagging to Unity within KW rating of unit		
Wave Form	Sine Wave, THD<3% (no load to full load)		
Voltage Regulation	+/-2%		
Transient Response (ms)	+/-4% under full load, change and corrected within 60 ms		
Frequency Stability	+/-0.5Hz (Free Running)		
Synchronization	Slew Rate: 1Hz/Sec. Max. Synchronizing Window +/-5%		
Transfer Time	0 ms		
Crest Factor	3:1		
Efficiency (AC to AC)	>88%		
Run-time (Full Load)	>8 min.	>8 min.	>8 min.
DC Start	Yes		
<b>BATTERY</b>			
Type	Sealed Lead Acid Maintenance Free		
Quantity (pcs)	3	6	8
Voltage(Vdc)	36	72	96
Recharge Time	8 Hours to 90%		
Supplementary Charger	Optional 200W/500W Chargers for extended backup application.		
<b>DISPLAY</b>			
LED	Utility, Battery Low, Inverter, Bypass, Test OK, Over Load Fault, Load / Battery Level, and Fault conditions		
Self Diagnostics	Push Button (On demand)		



MODEL	MS1000RT	MS2000RT	MS3000RT
PROTECTION			
Overload	AC Mode: 1) <105% continuously. 2) 105%~120% delay 50 seconds before switching to bypass. 3) 120%~150% delay 10 seconds before switching to bypass. 4) >150% Immediately switching to bypass. Backup Mode: Same delay time as AC mode, then completely shutdown.		
Short Circuit	Hold Whole System		
Overheat	Switch to Bypass		
High Voltage Trip	Switch to Backup Mode		
Battery Low	Alarm and Switch Off		
Noise Suppression	Complies with EN50091-2		
Spike Suppression	Complies with EN61000-4-5		
ALARMS			
Audible and Visual	Line Failure, Battery Low, Transfer to Bypass, Over Load, System Fault Conditions		
PHYSICAL			
Dimensions (WxHxD, mm)	440x88x385	440x132x482	440x176x482
Outlets (NEMA) 120Vac	4 x 5-15R	2 x 5-15R + 2 x 5-20R	Terminal + 1 x 5-30R
Outlets (IEC/Local) 230Vac	3pcs/1pc	3pcs/2pcs	Terminal/2pcs
Net Weights(Kgs)	16	29	39
ENVIRONMENT			
Operating Temperature	0°C ~ 40°C		
Temperature Warning	The battery design life is based on a temperature of 25°C. Ambient temperature above this range will reduce battery life.		
Altitude	0~2000m up to 40°C, 3000m up to 35°C		
Humidity	90% RH Maximum, Non-Condensing		
Noise	<45dB (at 1 meter)		
COMPUTER INTERFACE			
Interface Type	Standard RS232 Interface / USB (Option)		
Protocol	Megatec Protocol		
Compatibility of Bundled Software	UPSilon 2000 for Novell NetWare, Windows 95/98, Windows NT, Windows ME, Windows 2000, Windows XP or other Windows Operation Linux and Free BSD		
SNMP Adaptability AS/400 Card or True Relay Interface Card	Slot for Standard SNMP Card (optional) AS400 card or True Relay Interface Card provides,Utility Failure, Battery LOW,Bypass Active, UPS Shutdown functions.(optional)		
Optional Software	UPSillon 2000 for Unix, SNMP Adapter, USBMate, etc.		
SAFETY CONFORMANCE			
Quality Assurance	ISO9001 Certified Company		
Safety Standard	EN50091-1, UL		
EMC Standard	EN50091-2, EN61000-3-2, EN61000-3-3, FCC Class A		
Marks	CE, UL		

\* Above specifications are subject to change without prior notice

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